09011

25X1

DRAFT
29 March 1967

MATERIALS HANDLING STUDY - STAFF STUDY

1. PROBLEM:

To determine the most expeditious methods and procedures for the storage, retrieval, reproduction, control and transport of those materials essential to imagery exploitation on a timely basis and with retention of necessary quality.

2. FACTS BEARING ON THE PROBLEM:

The range of materials used in Center activities for imagery exploitation and for production of the resultant reports is extremely varied. The primary material, aerial roll film, is received in many different widths, lengths, and formats, and is used in all facets of exploitation from the immediate reporting phase, indexing, mensuration, second phase reporting, detailed analysis, final reporting and thence to a depository for retention as reference data. In addition to the more than 50,000 cans of film on hand, it is estimated that there are over two million separate pieces of support material, e.g. (1,250,000 maps and charts, 75,000 reports, 20,000 books and magazines, 50,000 to 100,000 miscellaneous indexes and files, and in excess of 150,000 supplemental photographs plus an undeterminate number of "film chips" or cut film of random size). The manual methods used to reproduce, store, retrieve, control and transport these items are ~~unwieldy~~ unwieldy,

time consuming and antiquated. Automated methods are required to increase the efficiency of handling such materials.

3. DISCUSSION:

a. Concept:

The objective of this study program is a thorough investigation into defined problem areas, the identity of additional problem areas through the investigation and analysis of current procedures, and recommendations for implementation of the most cost effective methods of generating, storing, retrieving and utilizing non-digital information in the imagery exploitation process.

b. Proposed Program:

It is felt that the following primary areas require investigation: (a) Imagery use wherein current techniques require repetitive handling of roll film or production of numerous rolls of the same imagery to meet the demand. (b) Imagery Storage and Transportation - the current system of control, storage, retrieval and transportation of over 50,000 rolls of film is cumbersome and outmoded. More than 24,000 square feet of floor space is being used for receipt, indexing, control, storage and transport of this roll film. (c) Collateral Materials - consideration herein is given to non-imagery information and the exclusion of computer stored information. Previously stated was an estimate of the volume of support material on hand at NPIC. It is felt that this volume could, in some areas, be better handled and controlled by a photographic reduction system such as microfilm, microfiche, or similar system tailored to the requirements of NPIC.

The program as proposed, will delve into all aspects of handling non-digital stored material. The above areas of major concern are considerably broad and could be the basis for separate investigation of each. However, since all three areas are a form of information ~~content~~ and all pertain to the problems of how to best make this information available on a timely basis and at the same time reduce redundancy and human error, it is felt the same investigation should cover the entire ~~gamit~~ gamut of material handling in NPIC. This effort is envisioned as a three-phase program, the first phase being defined as an investigative phase wherein the contractor will thoroughly investigate and analyze the current methods and procedures of handling the variety of material and data within the Center. As a result of this investigation the contractor is to submit a comprehensive report covering his analysis of Center processes and the identification of those requirements for information which ~~will not or~~ cannot be handled in a digital system. ~~Additionally,~~ A second report will follow presenting alternate conceptual designs which will meet the identified requirements. The second phase is intended to develop and evaluate alternate techniques for implementation of the conceptual design. The resultant reports on this phase will include a comparative analysis of all alternatives considered from both quantitative and qualitative aspects. The analysis will measure the proposed alternatives, each against the others, to demonstrate the amount of improvement each alternate can achieve over present methods. A detailed system plan will be prepared, based on the

selected alternatives, which will include system and equipment parameters, implementation time, impact on operational components, personnel and training requirements, and estimated costs for development, installation, and operation of the proposed system. Additionally, detailed specifications of the system components and component interfaces will be prepared to enable a logical and, hopefully, an uninterrupted transition into Phase III. Phase three, which is not a part of this study, will utilize the specifications and information generated under the Materials Handling Study for solicitation of proposals for installation and implementation of a modern materials and data handling system.

c. Selection of Contractor:

Of sixteen companies solicited to bid on the Materials Handling Study, seven responded with proposals on the program while the remaining nine companies responded with a "No bid" letter. The evaluation, since this program is decidely operational oriented, was made by Staff and Branch Chiefs from the Collateral Support Division, the Photographic Services Division and the Information Processing Division of NPIC. Additional evaluations were made by the Technical Planning Staff and the Development Staff of NPIC. The consensus of opinion from the evaluations was that Planning Research Corporation presented the best proposal. The evaluations were prepared on the basis of numerical values applied to specific areas of the Development Objective that were felt to require the strongest emphasis such as "Understanding the Problem," "Soundness of

Approach," "Compliance with Requirements," etc. Additionally, a comprehensive write-up was required from the evaluators as to their reasoning for selection, prior knowledge of the company, assigned personnel, etc. A grading factor was then applied to these two types of responses to determine the total number of first, second and third choices. The resultant figures indicated first, second and third choice of bidders.

d. Program Phasing:

The Materials Handling Study is to be performed as a three phase program. This portion of the program is to satisfy Phase I and Phase II. Phase III, of which this study is not a part, consists of installation and implementation of the selected system. Phase I, to investigate and analyse the current Center procedures of material and data handling, is envisioned as a six month effort wherein the investigation team(s) are performing almost wholly in-house to determine requirements, identify deficiencies and formulate solutions and alternatives. Phase II of the program is intended to develop and evaluate alternate techniques for implementation of the conceptual design resulting from the Phase I effort. Phase II will also include generation of installation and facilities preparation requirements, definative equipment specifications, determination and solutions of any interface areas, test and personnel training requirements, budgetary and procurement schedules, and a detailed implementation plan. Phase II is anticipated to require approximately nine months, making the total Materials Handling Study program a fifteen month effort. Planning Research Corporation has proposed

a break-out of Phase I into two definitive tasks and Phase II into three definitive tasks with a Task Report as the end product of each task. Each task conclusion offers the opportunity for a complete review and evaluation of accomplishments as well as planning or redirection, if required, for the following tasks.

e. Coordination:

Coordination has been affected with the Office of Research and Development (ORD) and internally through the evaluation process used in this program. In addition to these direct contacts, coordination with the Intelligence Community in general has been effected through COPE.

f. Alternatives:

The FY 1967 budgetary estimate for the Phase I and II efforts covered by this study was [redacted] The cost proposals received varied from [redacted] The selected contractor, [redacted] proposed Phase I at [redacted] and Phase II at [redacted] totaling [redacted] Of the seven proposals received, the [redacted] pricing was midway with three companies bidding higher and three lower. Of the three lower costs proposed, the lowest bidder simply expanded the Development Objectives, added engineering costs and a hard cover to make up the proposal. The next lower company proposed four sub-contractors plus an advisory panel, indicating considerable reliance on the subcontracts. One of the subcontractors is currently under contract to

25X1

25X1

25X1

25X1

the Center, and the outcome of his investigation is somewhat in doubt as to whether he will perform as per contract. The next lowest bidder proposed a merger with one of the better known research institutes which appears to be a very good approach. However, the company is strictly hardware oriented, and, regardless of the merger, the program would be guided and managed by the manufacturer and not by the research institute. Additionally, it was learned the manufacturer is being bought out by a larger organization. This will probably bring about radical management changes, which are always detrimental to a program. Of the three higher bidders, only one submitted an acceptable proposal, however it was oriented toward photo interpretation with insufficient devotion to the problem of material handling. The remaining two proposals considered did not meet the criteria of the Development Objectives. Alternate solutions to the Center's existing problems in the area of materials handling are: to disregard the problem entirely, allow the random methods to continue and at some future date, become so cumbersome that collateral data requests cannot be fulfilled with any degree of confidence on the part of the receptor; split fund the two phases into separate year funding which would result in considerable contract management problems and a probable time extension; or award a contract for the complete program including Phase III, which, without knowing at this time the extent of the program or equipments required, would be extremely difficult for a contractor to predict.

4. CONCLUSIONS:

In considering the problems facing the Center's current operational methods, the Materials Handling Study has been identified as one of the important areas of investigation and analysis. A thorough effort on this program will greatly assist NPIC in meeting its present and future commitments. It has been determined that the program is essential and that some degree of automation in materials handling is required to produce desired results.

5. RECOMMENDATIONS:

It is recommended that approval be granted to award a contract to [redacted] 25X1 [redacted] in the amount of [redacted] for a fifteen month effort 25X1 for a Materials Handling Study.

6. REFERENCES AND ATTACHMENTS:

TAB A - Catalog Form

TAB B - Organizations Solicited

TAB C - Development Objectives

Attachment - [redacted] Technical Proposal B-24-07-3125X1 dated 24 February 1967

(NOTE) - Program Phasing chart is included in the proposal - Section IV, Page 5